Total MCQs = 20

probability of having correct option = $\frac{1}{4}$

probability of wrong answer = $1 - \frac{1}{4} = \frac{3}{4}$

As per binomial distribution, probability of having exactly 5 wrong answers

$$\binom{n}{k} p^k (1-p)^{n-k}$$

$$\binom{n}{k} = \frac{n!}{k!(n-k)!}$$

Formula is $= \frac{n!}{k!(n-k)!} p^k (1-p)^{n-k}$

$n = 20$, $k = 15$, $p = \frac{1}{4}$, $n-k = 20-15 = 5$

$$= \frac{20!}{15! \, 5!} \times \left(\frac{1}{4}\right)^{15} \times \left(\frac{3}{4}\right)^{5}$$

$$= \frac{20 \times 19 \times 18 \times 17 \times 16 \times 15 \times 14 \times 13 \times 12 \times 11 \times 10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 \times 1^{15} \times 3 \times 3 \times 3 \times 3 \times 3}{15 \times 14 \times 13 \times 12 \times 11 \times 10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 \times 5 \times 4 \times 3 \times 2 \times 1 \times 4^{15} \times 4^5}$$

$$= 0.0000034$$